

## CENTRAL INTELLIGENCE AGENCY

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- (l) iron bedstands
- (m) nuts and bolts
- (n) many types of drills and cutters
- (o) small infantry shovels
- (p) parts for "faust-patron" (a small bazooka-type weapon)
- (q) parts of railroad car knuckle couplers
- (r) wooden furniture for military barracks
- (s) oxygen and nitrogen (as No 17 included a gas plant)
- (t) coated electrodes, and
- (u) steam rollers.

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3. The type of products which Machine Plant No 17 is capable of manufacturing but generally did not, at least until March 1952, are:

- (a) any type of metal construction based on the electric welding process, such as bridges, frameworks for buildings, tanks, metal barrels, machine bodies for dynamos and electric motors, etc. No 17 had an excellent electric welding department, as well as a hot bending department, with experienced personnel. In general, engineers were emigre' Russians and workers were Chinese. Construction personnel were also good and plant personnel built some of No 17's shops themselves.
- (b) any products made by the hot pressing method from round or angular rods; also rivets, nuts and bolts.
- (c) iron casting up to about two tons.
- (d) casting of special iron for piston rings and cylinder sleeves.
- (e) casting of malleable iron up to 30 kilograms.
- (f) aluminum casting, mainly for pistons.
- (g) any type of cold pressed products, with sheet thickness of not over one mm and area of not more than two square feet.
- (h) any kind of hot bending products made by the blacksmith process, as there were no hydraulic presses for this.
- (i) railroad freight cars of metal or wood (flatcars, boxcars, gondolas, tank cars), if some other plant provided the axles. No 17 was capable of producing railroad "griffin" wheels (solid, of cast iron). However, there was no hydraulic equipment to fit wheels onto axles. In late 1951 high plant officials discussed the possibility of manufacturing railroad cars.
- (j) any kind of steel part details which are turned on lathes, milling machines, planing machines, and boring and turning lathes.
- (k) wood work such as simple furniture, coffins, etc. No 17 had a sawmill and woodworking machines. There were four band saws.

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4.  No 17's complete production in types and amounts for the calendar year of 1949. The following is an approximate list of that production:

<u>ITEM</u>	<u>AMOUNT</u>
(a) Bridge cranes - bridges only without carriages for this first year of production; without motors and without electric equipment. In type they were 20 m span, five ton lifting capacity, one hook, three motors, three sets of reducing gears, control cabin under the beams.	100 (in addition 10 or 14 complete bridge cranes were produced)

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<u>ITEM</u>	<u>AMOUNT</u>
Iron sheets of six and eight mm thickness were used in manufacture; welded, no rivets; all sides of beams were solid. The cranes were made according to standard printed drawings made at the Moscow Crane Factory.	
(b) Movable tire vulcanizers - a set contained two easily separated parts: The "stove" with a flat boiler, welded from two "U" shaped beams, and curved steam containers in which the tires were vulcanized.	400
(c) Water pipes - these were made of cast iron: 600 mm diameter, four m length; included angles, crossings, etc. The pipes had the usual profile, but the walls were thicker, up to 14 or 15 mm. Control pressure was 15 atmospheres. Vertical casting method used, no centrifugal installation. Length was limited to only four m as the ground under the casting shop was unsuitable - gravel with water very near the surface. A deeper excavation would have endangered the building.	1,000
(d) Cast iron pipes - with a 75 mm diameter and a 3 m length.	300
(e) Stationary aviation gasoline storage tanks - 25m <sup>3</sup> ; 20 tons capacity. Iron sheets of six mm were used; bottoms had inside reinforcement.	300
(f) Iron framework for own factory shops (included cutting, welding, and fixing in position) - different types of framework were produced, dependent primarily upon the kind of iron available in the plant.	400-500 tons
(g) Rehabilitation of soda factory - consisting primarily of changing the piping system.	80-100 men working one year
(h) General repair of the piping system of a 10 thousand ton Soviet oil tanker at Dairen Dock, mostly welding and fitting.	50 men working six months
(i) Small enamelled bowls - the fact that the factory made such items is a further indication that it was a conglomeration of several plants. The enamelling was done elsewhere. The hollow ware section was later separated from the factory.	10,000
(j) Electric bulb caps - In 1949 and 1950 these were made from used "tin cans", mostly condensed milk cans. Chinese contractors cut the cans and pressed them more or less flat. The factory pressed the metal into caps, 14 or 15 machines in the process. The glass points were added and the product was then coated by the cold galvanizing method. In late 1950 or early 1951, No 17 began to receive from the USSR thin iron sheets of about .3 mm (sic) thickness for this purpose. [redacted] It was rumored [redacted]	2,000,000

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<u>ITEM</u>	<u>AMOUNT</u>
that the cap section was to be transferred to the electric bulb plant (fabrika elektrichiskikh lamp) in Dairen. Perhaps this was done in 1952. No 17's cap section was small, employing only about 30 workers.	50X1

(k) Jacks and other tools for automotive vehicles - they were not of very good quality because the orders usually were limited to several hundred pieces (never more than one thousand) and the factory could neither obtain proper materials nor create a production line specifically for this purpose. Not much attention was paid to this production.

(l) Spare parts for automotive vehicles.

1. Pistons - in 1949 pistons were of poor quality because of the lack of pure aluminum. The factory often used metal obtained from aircraft which had crashed. Beginning in 1950, the plant received aluminum from the USSR. The melting process was changed in order to avoid iron ingredients and the pistons greatly improved in quality.

2. Piston rings - produced separately and also by the block process (casting by centrifugal method). The latter process called for cutting into separate rings. The block process was introduced in 1951. The rings passed tests which met Soviet standards.

3. Cylinder sleeves - beginning in 1951 these were also cast by the centrifugal method, the sleeves were made from special casting metal.

4. Gears and shafts - orders for these parts were not very large and the raw materials were often not of the proper composition and shape. It was necessary at times to cast special steel using No 17's own electric furnace, with the attendant difficulty of obtaining the proper ingredients. The products were considered to be of good quality by Soviet standards. Gears and shafts were not favorite products with the administrators of the plant because of the difficulties described above.

(m) Drills and cutters

(n) Oxygen	for about 40,000 spherical tanks of 6m <sup>3</sup> each
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(o) Nitrogen	for about 1,000 containers of the same type
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At the end of 1949 there were also many unfinished items. Most important of these were 34 bridge cranes which were 60% completed.

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Every year, ie, 1950 and 1951, indicated an increase of production of about 20-25%. On the other hand, the enamelled

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hollow-ware shop was no longer a part of the plant and there were no further orders for such products as tire vulcanizing equipment.

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5. There were some items, not produced in 1949, which were manufactured during the following years. Bridge cranes were made in 12 or more different sizes, ie, with different spans, from 10 m to 33 m. The type was the same as described above and had a five ton lifting capacity. Others, under construction [redacted] in March 1952, had capacities of 10 and 15 tons. In 1951 orders for cranes arrived from the Chinese Communist authorities in Mukden which caused difficulties. The cranes were ordered for old Japanese-built shops and the span was calculated in "shaku" (a Japanese "foot" which cannot be converted to round metric figures). The shop walls near the crane rails did not have the same dimensions and shapes as specified by Soviet standards. Therefore, the ends of the bridges had to be reconstructed to correspond to the shop space, as the cranes on initial delivery did not fit the space and had to be rebuilt on the spot by factory personnel sent there.
6. A summary of No 17's tentative production program for 1952 may be of interest. It was drawn up by plant officials on the basis of what they considered to be the most practical utilization of the plant's production potential as of that time. The plan, as regards major items, was approximately as follows:

<u>ITEM</u>	<u>QUANTITY PER YEAR</u>
(a) Complete bridge cranes of five tons lifting capacity	100
(b) Cranes of 10 tons (to be produced for the first time)	10 or 15
(c) Cranes of 15 tons (experimental production; would have to use gears of different size from those of other cranes)	one or two
(d) Steam winches of three tons	15-25
(e) Storage tanks for aviation gas	300-400
(f) Water pipes of two or three different sizes	1,000-1,500 tons
(g) Insulator caps	3,000-4,000
(h) Nuts, bolts, rivets, hooks, etc	500-600 tons
(i) Mine tip-wagons	2,000-3,000
(j) Automotive spare parts and tools (pistons, rings, and cylinder sleeves could be made easily by the plant in large quantities)	
(k) Some woodwork	
(l) Miscellaneous	

In practise, however, the Chinese Communist authorities placed orders in early 1952 for miscellaneous items and even divided some of the orders among various factories. There were no orders for winches or water pipes.

7. Machine Plant No 17 engaged in munitions production only once. In 1951 the Chinese Northeastern Industrial Administration in Mukden ordered the

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manufacture of four thousand pieces for "faust-patrons" (a type of anti-tank weapon similar to a small bazooka). The pieces were made of high quality steel specially supplied to the plant.

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The factory did not have the specialized machines necessary for production of munitions and therefore was incapable of this type of manufacture, except for some parts of weapons to be made in limited quantity.

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